Amendments to the Claims

Please amend the claims as in the following listing:

1. (Canceled)

2. (Currently Amended) The device of claim 7, ~~1,~~
wherein the manifold also has plural fluid exit ports therein; and
wherein each pair of adjacent inlet slots has at least one of the exit ports therebetween.

3. (Original) The device of claim 2, wherein the exit ports are substantially parallel to the inlet slots.

4. (Original) The device of claim 3, wherein each of the inlet slots is substantially evenly spaced between a pair of adjacent exit ports.

5. (Currently Amended) A cooling device for cooling a cooled surface, the device comprising: ~~The device of claim 3,~~
a manifold; and
one or more side walls;
wherein the manifold, the side walls, and the cooled surface together define an enclosed volume;
wherein the manifold and the cooled surface are on opposite sides of the enclosed volume;
wherein the manifold has plural inlet slots therein for directing fluid at the cooled surface;

wherein the inlet slots are substantially parallel to each other;

wherein the manifold also has plural fluid exit ports therein;

wherein each pair of adjacent inlet slots has at least one of the exit ports therebetween;

wherein the exit ports are substantially parallel to the inlet slots; and

wherein the exit ports include a pair of end exit ports on opposite ends of the enclosed volume.

6. (Original) The device of claim 5, wherein the end exit ports each have a width approximately half a width of the other exit ports.

7. (Currently Amended) A cooling device for cooling a cooled surface, the device comprising: ~~The device of claim 1,~~

a manifold; and

one or more side walls;

wherein the manifold, the side walls, and the cooled surface together define an enclosed volume;

wherein the manifold and the cooled surface are on opposite sides of the enclosed volume;

wherein the manifold has plural inlet slots therein for directing fluid at the cooled surface;

wherein the inlet slots are substantially parallel to each other; and

wherein the inlet slots have a substantially rectangular cross section shape.

8. (Currently Amended) A cooling device for cooling a cooled surface, the device comprising: ~~The device of claim 1,~~

a manifold; and

one or more side walls;

wherein the manifold, the side walls, and the cooled surface together define an enclosed volume;

wherein the manifold and the cooled surface are on opposite sides of the enclosed volume;

wherein the manifold has plural inlet slots therein for directing fluid at the cooled surface;

wherein the inlet slots are substantially parallel to each other;

wherein the inlet slots are separated from one another in a first direction; and

wherein the inlet slots have a cross section shape with a length in a second direction that is perpendicular to the first direction, that is greater than a width in the first direction.

9. (Original) The device of claim 8, wherein the length is at least about 5 times the width.

10. (Original) The device of claim 9, wherein the length is at least about 20 times the width.

11. (Currently Amended) A cooling device for cooling a cooled surface, the device comprising: ~~The device of claim 1,~~

a manifold; and

one or more side walls;

wherein the manifold, the side walls, and the cooled surface together define an enclosed volume;

wherein the manifold and the cooled surface are on opposite sides of the enclosed volume;

wherein the manifold has plural inlet slots therein for directing fluid at the cooled surface;

wherein the inlet slots are substantially parallel to each other; and

wherein the cooling surface has a substantially flat major surface facing the inlet slots.

12. (Currently Amended) A cooling device for cooling a cooled surface, the device comprising: ~~The device of claim 1,~~

a manifold; and

one or more side walls;

wherein the manifold, the side walls, and the cooled surface together define an enclosed volume;

wherein the manifold and the cooled surface are on opposite sides of the enclosed volume;

wherein the manifold has plural inlet slots therein for directing fluid at the cooled surface;

wherein the inlet slots are substantially parallel to each other; and

in combination with a pump coupled to manifold to provide a cooling fluid to the inlet slots, and to remove the cooling fluid from the exit ports.

13. (Currently Amended) A cooling device for cooling a cooled surface, the device comprising: ~~The device of claim 1,~~

a manifold; and

one or more side walls;

wherein the manifold, the side walls, and the cooled surface together define an enclosed volume;

wherein the manifold and the cooled surface are on opposite sides of the enclosed volume;

wherein the manifold has plural inlet slots therein for directing fluid at the cooled surface;

wherein the inlet slots are substantially parallel to each other; and

wherein the cooled surface has fins thereupon that are substantially perpendicular to the inlet slots.

14. (Currently Amended) A cooling device for cooling a cooled surface, the device comprising: ~~The device of claim 1,~~

a manifold; and

one or more side walls;

wherein the manifold, the side walls, and the cooled surface together define an enclosed volume;

wherein the manifold and the cooled surface are on opposite sides of the enclosed volume;

wherein the manifold has plural inlet slots therein for directing fluid at the cooled surface;

wherein the inlet slots are substantially parallel to each other; and

wherein the plural inlet slots are a first set of inlet slots that are parallel to one another in a first direction; ~~and~~

further comprising a second set of inlet slots that are offset from the first set of inlet slots in a second direction that is substantially perpendicular to the first direction.

15. (Canceled)

16. (Currently Amended) A method of cooling a cooled surface, comprising: ~~The method of claim 15,~~

directing a cooling fluid into an enclosed volume through a plurality of substantially-parallel inlet slots toward a major surface of the cooled surface;

transferring heat from the cooled surface to the cooling fluid; and

removing the cooling fluid from the enclosed volume through exit ports, wherein adjacent pairs of the inlet slots have respective substantially-parallel exit ports therebetween;

wherein the directing includes directing a subcooled liquid toward the major surface; and

wherein the transferring heat includes single-phase heat transfer from the cooled surface to the subcooled liquid.

17. (Currently Amended) A method of cooling a cooled surface, comprising: ~~The method of claim 15,~~

directing a cooling fluid into an enclosed volume through a plurality of substantially-parallel inlet slots toward a major surface of the cooled surface;

transferring heat from the cooled surface to the cooling fluid; and

removing the cooling fluid from the enclosed volume through exit ports, wherein adjacent pairs of the inlet slots have respective substantially-parallel exit ports therebetween;

wherein the directing includes directing a subcooled or saturated liquid toward the major surface; and

wherein the transferring heat includes boiling heat transfer from the cooled surface to the liquid.

18. (Currently Amended) The method of claim 19, ~~15,~~ wherein the inlet slots and the exit ports are in a manifold.

19. (Currently Amended) A method of cooling a cooled surface, comprising: ~~The method of claim 15,~~

directing a cooling fluid into an enclosed volume through a plurality of substantially-parallel inlet slots toward a major surface of the cooled surface;

transferring heat from the cooled surface to the cooling fluid; and

removing the cooling fluid from the enclosed volume through exit ports, wherein adjacent pairs of the inlet slots have respective substantially-parallel exit ports therebetween;

wherein the inlet slots are separated from one another in a first direction; and

wherein the inlet slots have a cross section shape with a length in a second direction that is perpendicular to the first direction, that is greater than a width in the first direction.

20. (Original) The method of claim 19, wherein the length is at least about 5 times the width.

21. (Original) The method of claim 20, wherein the length is at least about 20 times the width.

22. (Original) The method of claim 20, wherein the exit ports also have a length that is at least about 5 times a width of exit port.

23. (Original) A method of designing a slot jet cooling device, the method comprising:

selecting a cooling fluid;

selecting a desired operating regime;

performing a parametric study calculating parameters for a variety of geometries;

and

selecting a cooling device design based on results of the parametric study.

24. (New) The device of claim 8,

wherein the manifold also has plural fluid exit ports therein; and

wherein each pair of adjacent inlet slots has at least one of the exit ports therebetween.

25. (New) The device of claim 24,

wherein the exit ports are substantially parallel to the inlet slots; and

wherein each of the inlet slots is substantially evenly spaced between a pair of adjacent exit ports.